

IT IS CLAIMED:

1. A non-volatile memory comprising a plurality of data storage areas, each of the data storage areas containing:
 - a user data portion; and
 - an overhead data portion, wherein the overhead data portion of each data storage area contains a first flag for indicating that another one of the data storage areas is correctly written.
2. The non-volatile memory of claim 1, wherein the overhead data portion of each of said data storage areas further contains a second flag for indicating that the data storage area itself is correctly written.
3. The non-volatile memory of claim 1, wherein each of said data storage areas corresponds to a sector of data.
4. The non-volatile memory of claim 1, wherein the data storage areas are organized into a plurality of units of erase, and wherein the overhead data portion of a predetermined data storage unit in each of the units of erase further contains a third flag for indicating that the unit of erase to which the predetermined data storage unit belongs has had an erase operation completed.
5. The non-volatile memory of claim 1, wherein the data storage areas are organized into a plurality of units of erase, and wherein each of said blocks further contains an additional data storage area the overhead data portion of which having said second flag and not having said first flag.
6. The non-volatile memory of claim 5, wherein the overhead data portion of each of said data storage areas not having said first flag contains a third flag for indicating that the unit of erase to which the data storage areas not having said first flag belongs has had an erase operation completed.

7. The non-volatile memory of claim 6, wherein said data storage areas are written according to a predetermined sequence, wherein said another one of the data storage areas is the preceding data storage area in the sequence, and wherein said data storage areas not having said first flag are the first data storage areas in said sequence in the respective blocks to which they belong.

8. The non-volatile memory of claim 1, wherein said first flags are each composed of multiple bits.

9. The non-volatile memory of claim 1, wherein said data storage areas are written according to a predetermined sequence and wherein said another one of the data storage areas is the preceding data storage area in the sequence.

10. The non-volatile memory of claim 1, wherein said first flags and the content of the user data portions are protected by error correction code (ECC).

11. A non-volatile memory comprising a plurality of data storage areas, each of the data storage areas containing:

a user data portion; and
an overhead data portion,

wherein the data storage areas are organized into a plurality of units of erase, and wherein the overhead data portion of a predetermined data storage unit in each of the units of erase further contains a flag for indicating that the unit of erase to which the predetermined data storage unit belongs has had an erase operation completed.

12. The method of claim 11, wherein said flag is comprised of multiple bits.

13. A memory, comprising:
a non-volatile memory comprising a plurality of data storage areas; and

a controller for the reading and writing of data to the memory, wherein during a sequential write process of data into two or more of said data storage areas, for each data storage area subsequent to the first, an indication of the write of the preceding data storage area is written into the current data storage area as part of its write process.

14. The memory of claim 13, wherein during the sequential write process, for the last of the data storage areas in the sequential process, an indication of the write of the last of the data storage areas is written into the last of the data storage areas.

15. The memory of claim 14, wherein each of said data storage areas includes a data portion and an overhead portion, and wherein said indications are written into the overhead portion.

16. A method of operating a non-volatile memory, comprising:
programming first content including user data into a first data storage area;

verifying that the first content is correctly programmed in the first data storage area;

subsequently programming second content including user data into a second data storage area; and

concurrently with said programming second content, writing to the second data storage area an indication that the first data storage area is correctly programmed.

17. The method of claim 16, further comprising:
subsequent to said programming second content, verifying that the second content is correctly programmed in the first data storage area; and

subsequently writing to the second data storage area an indication that the second data storage area is correctly programmed.

18. The method of claim 16, wherein the data storage areas are written in a predetermined order.

19. The method of claim 18, wherein data storage area are grouped into units of erase, the method further comprising:

subsequent to said programming second content, verifying that the second content is correctly programmed in the first data storage area; and

subsequently writing to the second data storage area an indication that the second data storage area is correctly programmed when said second data storage is the last of the data storage areas written in the predetermined order in the unit of erase to which the second data storage area belongs.

20. The method of claim 16, wherein the second content and the indication that the first data storage area is correctly programmed are protected by error correction code (ECC).

21. A method of determining if a plurality of sequentially written sectors have been correctly programmed, comprising:

determining if every sector but the initial sector in the sequence was correctly programmed based on the content of the following sector;

finding a first sector not indicated to be correctly programmed based upon content of the subsequent sector; and

based on the content of the first sector itself, determining if the first sector is correctly programmed.

22. The method of claim 21, wherein said content of the following sector includes a flag indicating that the preceding sector is correctly programmed.

23. The method of claim 22, wherein said flag indicating that the preceding sector is correctly programmed is comprised of multiple bits.

24. The method of claim 22, wherein said flag indicating that the preceding sector is correctly programmed is protected by error correction code (ECC).

25. The method of claim 21, wherein said content of the first sector itself includes a flag indicating that the first sector is correctly programmed.

26. The method of claim 25, wherein said flag indicating that the first sector is correctly programmed is comprised of multiple bits.

27. A method of operating a non-volatile memory, comprising:
erasing the data content of a block of the non-volatile memory, wherein the block comprises a plurality of sectors each having an data portion and an overhead portion;

verifying that the block is successfully erased; and
writing an indication that the block is correctly successfully into the overhead portion of a designated one of the sectors.

28. The method of claim 27, wherein said indication comprises a flag.

29. The method of claim 28, wherein said flag is comprised of multiple bits.

30. A method of operating a non-volatile memory having a plurality of sectors each having a data portion and an overhead portion, comprising:

altering the data content of at least a first sector;
subsequently verifying that said altering the data content of at least a first sector is successfully completed; and

subsequently recording in the overhead portion of a second sector an indication that said altering the data content of at least a first sector is successfully completed.

31. The method of claim 30, wherein said altering the data content is a programming operation.

32. The method of claim 30, wherein the first and second sectors belong to the same block and said altering the data content is an erase operation.